

Remarks

The Office Action mailed November 10, 2005 has been carefully reviewed and the foregoing remarks have been made in consequence thereof.

Claims 1-27 are now pending in this application. Claims 1-20 stand rejected. Claims 21-27 are withdrawn from consideration.

The rejection of Claims 1, 2, 7, 9-11, 15, 16, and 18 under 35 U.S.C. § 103(a) as being unpatentable over Nettel et al. (U.S. Patent 2,372,846) (“Nettel”) in view of Erickson (U.S. Patent 6,412,291) (“Erickson”) or Zaugg (U.S. Patent 4,522,024) (“Zaugg”) is respectfully traversed.

Nettel describes a water distillation system for use in distilling raw water with air compressor plants. Specifically a compressor (1) discharges hot compressed air through a pipe (2) into a spray-type humidifier chamber (3), that includes a water spray nozzle (4). Air channeled through chamber (3) is humidified. Surplus cooling water is discharged through a valved pipe (5) and the humidified air is cooled by spray nozzles (4). The humidified air is channeled into an intercooler (7) and then to a second compressor (9). Intercooler (7) is injected with cooling water, and condensed fresh water accumulates at a lower end of intercooler (7) prior to being withdrawn through a valved pipe (14). Notably, Nettel does not describe nor suggest channeling condensate from an intercooler to a compressor to facilitate reducing an operating temperature of a gas turbine engine. Rather Nettle describes using an intercooler to facilitate distillation of water. Moreover, Nettle does not describe nor suggest a cooling system wherein water is channeled from the intercooler to the water spray nozzles.

Erickson describes a method of increasing the efficiency and capacity of an air compressor (10) by pre-cooling the inlet air below the dew point in an air chiller (11), and then injecting the resulting condensate into the inlet of compressor (10) using a fogger (16). Notably, Erickson does not describe a gas turbine engine that channels condensate from an intercooler to a second compressor to facilitate reducing an operating temperature of the gas turbine engine. Rather, Erickson merely describes re-circulating condensate in a combustion engine having only one compressor.

Zaugg describes a gas turbine power station which uses water injection to facilitate reducing the formation of NO_x. The power station includes an intercooler (5) that is installed between a low-pressure stage and medium-pressure stage, and between the medium-pressure stage and a high-pressure stage of a compressor group (3). Condensate is channeled from intercooler (5) into an intermediate condensate vessel (11), and then into a main condensate vessel (13). During operation, condensate is channeled from reservoir (13) into injection devices (16) within a low-pressure combustion chamber (8) and within a high-pressure combustion chamber (9). Notably, Zaugg does not describe a gas turbine engine that channels condensate from an intercooler to a second compressor to facilitate reducing an operating temperature of the gas turbine engine. Rather, Zaugg describes injecting condensate from an intercooler into combustion chambers to facilitate reducing NO_x formation.

Applicants respectfully submit that obviousness cannot be established by merely suggesting that it would have been obvious to one of ordinary skill in the art to modify Nettel with Erickson or Zaugg. As explained by the Federal Circuit, “to establish obviousness based on a combination of the elements disclosed in the prior art, there must be some motivation, suggestion or teaching of the desirability of making the specific combination that was made by the Applicants.” In re Kotzab, 54 USPQ2d 1308, 1316 (Fed. Cir. 2000). MPEP 2143.01.

Furthermore, as is well established, the mere fact that the prior art structure could be modified does not make such a modification obvious unless the prior art suggests the desirability of doing so. See In re Gordon, 221 U.S.P.Q.2d 1125 (Fed. Cir. 1984).

Furthermore, the Federal Circuit has determined that:

[i]t is impermissible to use the claimed invention as an instruction manual or “ template” to piece together the teachings of the prior art so that the claimed invention is rendered obvious. This court has previously stated that “[o]ne cannot use hindsight reconstruction to pick and choose among isolated disclosures in the prior art to deprecate the claimed invention.”

In re Fitch, 23 USPQ2d 1780, 1784 (Fed. Cir. 1992). Further, under Section 103, “it is impermissible to pick and choose from any one reference only so much of it as will support a given position, to the exclusion of other parts necessary to the full appreciation of what

such reference fairly suggests to one of ordinary skill in the art.” In re Wesslau , 147 USPQ 391, 393 (CCPA 1965). Rather, there must be some suggestion, outside of Applicants’ disclosure, in the prior art to combine such references, and a reasonable expectation of success must be both found in the prior art, and not based on Applicants’ disclosure. In re Vaeck, 20 U.S.P.Q.2d 1436 (Fed. Cir. 1991). In the present case, neither a suggestion nor motivation to combine the cited art, nor any reasonable expectation of success has been shown.

Accordingly, since there is no teaching nor suggestion in the cited art for the claimed combination, the Section 103 rejection appears to be based on hindsight reconstruction in which isolated disclosures have been picked and chosen in an attempt to deprecate the present invention. Of course, such a combination is impermissible, and for at least this reason, Applicants submit that Claims 1, 2, 7, 9-11, 15, 16, and 18 are patentable over Nettel in view of Erickson or Zaugg.

In addition, as is well established, obviousness cannot be established by combining the teachings of the cited art to produce the claimed invention, absent some teaching, suggestion, or incentive supporting the combination. None of Nettle, Erickson, nor Zaugg, considered alone or in combination, describe nor suggest a gas turbine engine that channels condensate from an intercooler to a second compressor to facilitate reducing an operating temperature of a gas turbine engine.

Moreover, and to the extent understood, none of Nettle, Erickson, nor Zaugg, considered alone or in combination, describe nor suggest the claimed invention. Specifically, Claim 1 recites a method for operating a gas turbine engine, including a first compressor, a second compressor, and a turbine, coupled together in serial flow arrangement, wherein the method comprises “channeling compressed airflow discharged from the first compressor through an intercooler having a cooling medium flowing therethrough . . . operating the intercooler such that condensate is formed in the intercooler from the compressed airflow . . . channeling the condensate to an inlet of the second compressor to facilitate reducing an operating temperature of the gas turbine engine.”

None of Nettle, Erickson or Zaugg, considered alone or in combination, describe or suggest a method for operating a gas turbine engine as recited in Claim 1. More specifically, none of Nettle, Erickson or Zaugg, considered alone or in combination, describe or suggest a method for operating a gas turbine engine, wherein condensate, formed in an intercooler, is channeled to an inlet of a second compressor. Rather, in contrast to the present invention, Nettle describes channeling air from an intercooler through a compressor to facilitate distilling water, Erickson describes re-circulating condensate in a combustion engine having only one compressor, and Zaugg describes injecting condensate from an intercooler into combustion chambers.

Accordingly, for at least the reasons set forth above, Claim 1 is submitted to be patentable over Nettle in view of Erickson or Zaugg.

Claims 2 and 7 depend from independent Claim 1. When the recitations of Claims 2 and 7 are considered in combination with the recitations of Claim 1, Applicants submit that dependent Claims 2 and 7 likewise are patentable over Nettle in view of Erickson or Zaugg.

Claim 9 recites a cooling system for a gas turbine engine that includes at least a first compressor, a second compressor, and a turbine, wherein the cooling system comprises “an intercooler coupled downstream from the first compressor such that compressed air discharged from the first compressor is routed therethrough, said intercooler having a working fluid flowing therethrough . . . an injection system coupled in flow communication with said intercooler, said injection system configured to channel condensate formed in said intercooler into the second compressor to facilitate reducing an operating temperature of the gas turbine engine.”

None of Nettle, Erickson or Zaugg, considered alone or in combination, describe or suggest a cooling system for a gas turbine engine as recited in Claim 9. More specifically, none of Nettle, Erickson or Zaugg, considered alone or in combination, describe or suggest a cooling system for a gas turbine engine, wherein an injection system is configured to channel condensate, formed in an intercooler, to a second compressor. Rather, in contrast to the present invention, Nettle describes channeling air from an intercooler through a compressor to facilitate distilling water, Erickson describes re-circulating condensate in a combustion

engine having only one compressor, and Zaugg describes injecting condensate from an intercooler into combustion chambers.

Accordingly, for at least the reasons set forth above, Claim 9 is submitted to be patentable over Nettle in view of Erickson or Zaugg.

Claims 10-11 and 15 depend from independent Claim 9. When the recitations of Claims 10-11 and 15 are considered in combination with the recitations of Claim 9, Applicants submit that dependent Claims 10-11 and 15 likewise are patentable over Nettle in view of Erickson or Zaugg.

Claim 16 recites a gas turbine engine comprising “a first compressor . . . a second compressor downstream from said first compressor . . . a turbine coupled in flow communication with said second compressor . . . a cooling system comprising . . . an intercooler coupled downstream from said first compressor such that compressed air discharged from said first compressor is routed therethrough, said intercooler having a working fluid flowing therethrough . . . a condensate injection system coupled in flow communication with said intercooler, said condensate injection system configured to channel condensate formed in said intercooler into said second compressor to facilitate reducing a temperature of said gas turbine engine.”

None of Nettle, Erickson or Zaugg, considered alone or in combination, describe or suggest a gas turbine engine as recited in Claim 16. More specifically, none of Nettle, Erickson or Zaugg, considered alone or in combination, describe or suggest a gas turbine engine, wherein a condensate injection system is configured to channel condensate, formed in an intercooler, to a second compressor. Rather, in contrast to the present invention, Nettle describes channeling air from an intercooler through a compressor to facilitate distilling water, Erickson describes re-circulating condensate in a combustion engine having only one compressor, and Zaugg describes injecting condensate from an intercooler into combustion chambers.

Accordingly, for at least the reasons set forth above, Claim 16 is submitted to be patentable over Nettle in view of Erickson or Zaugg.

Claim 18 depends from independent Claim 16. When the recitations of Claim 18 are considered in combination with the recitations of Claim 16, Applicants submit that dependent Claim 18 likewise is patentable over Nettle in view of Erickson or Zaugg.

For the reasons set forth above, Applicants respectfully request that the Section 103 rejection of Claims 1, 2, 7, 9-11, 15, 16, and 18 be withdrawn.

The rejection of Claims 1-20 under 35 U.S.C. § 103(a) as being unpatentable over Zaugg in view of either Anderson (U.S. Patent 5,669,217) (“Anderson”) and/or Payling, et al. (U.S. Patent 6,467,252) (“Payling”) and optionally in view of Tsukamoto (U.S. Patent 6,397,578) (“Tsukamoto”) is respectfully traversed.

Zaugg is described hereinabove.

Anderson describes an intercooled gas turbine engine having at least two air compression stages, and at least one nozzle (21) for injecting coolant into air channeled between the two compression stages. Specifically, air discharged from a low pressure combustor (5) is sprayed with a liquid coolant prior to the air entering a high-pressure compressor (20). However, Anderson does not describe nor suggest that the condensate enters the high-pressure compressor (20). Rather, Anderson recites at column 4, lines 15-22 that, “the water should evaporate before contacting the high velocity blades to avoid erosion of the high velocity blades in the high-pressure compressor. Therefore, it is important to inject the liquid coolant into the space [between the low-pressure compressor and the high pressure compressor] in the form of particles that are fine enough so that they can evaporate rapidly to avoid erosion of the high velocity blades in the high-pressure compressor.” As such, and notably, Anderson does not describe nor suggest injecting condensate from an intercooler into a second compressor.

Payling describes a precompressor and pre-booster water spray injection apparatus (24). Specifically, air is channeled from a low-pressure compressor (12), to a high pressure compressor (14). A portion of compressed air discharged from high-pressure compressor (14) is diverted through an intercooler (68), wherein it is cooled and injected into high-pressure compressor (14). Furthermore, a water spray is supplied to inlet (26) of high

pressure compressor (14). The water spray cools the air flow entering high-pressure compressor (14) for at least each stage of compressor (14) until it evaporates. Notably, Payling does not describe a gas turbine engine that channels condensate from an intercooler to a second compressor to facilitate reducing an operating temperature of the gas turbine engine. Rather, Payling describes an engine wherein cooled air, not condensate, is discharged from an intercooler into a second compressor.

Tsukamoto describes a gas turbine power plant, wherein a spray device (2) sprays fine water droplets into compressed air (A) to humidify the compressed air (A). The humidified air (B) is mixed with fuel (6), and is ignited to produce combustion gases, used to drive a turbine (7). Notably, Tsukamoto does not describe a gas turbine engine that channels condensate from an intercooler to a second compressor to facilitate reducing an operating temperature of the gas turbine engine. Specifically, at column 3, lines 6-8 Tsukamoto recites that an “object of the present invention is to provide a gas turbine power plant which has no intercooler for compressed air”

Applicants respectfully submit that the Section 103 rejection of the presently pending claims is not a proper rejection. As is well established, obviousness cannot be established by combining the teachings of the cited art to produce the claimed invention, absent some teaching, suggestion, or incentive supporting the combination. None of Zaugg, Anderson, Payling, or Tsukamoto considered alone or in combination, describe or suggest the claimed combination. Furthermore, in contrast to the assertion within the Office Action, Applicants respectfully submit that it would not be obvious to one skilled in the art to combine Zaugg with either Anderson, Payling or Tsukamoto because there is no motivation to combine the references suggested in the art. Additionally, the Examiner has not pointed to any prior art that teaches or suggests to combine the disclosures, other than Applicants’ own teaching. Rather, only the conclusory statement that “it would have been obvious to one of ordinary skill in the art to inject the water between the compressor stages, as taught by Anderson and/or Payling, in order to cool the compressed air, to reduce compressor power and increase the overall power from the turbine/output levels” suggests combining the disclosures.

As the Federal Circuit has recognized, obviousness is not established merely by combining references having different individual elements of pending claims. Ex parte Levengood, 28 U.S.P.Q.2d 1300 (Bd. Pat. App. & Inter. 1993). MPEP 2143.01. Rather, there must be some suggestion, outside of Applicants' disclosure, in the prior art to combine such references, and a reasonable expectation of success must be both found in the prior art, and not based on Applicant's disclosure. In re Vaeck, 20 U.S.P.Q.2d 1436 (Fed. Cir. 1991). In the present case, neither a suggestion or motivation to combine the prior art disclosures, nor any reasonable expectation of success has been shown.

Furthermore, it is impermissible to use the claimed invention as an instruction manual or "template" to piece together the teachings of the cited art so that the claimed invention is rendered obvious. Specifically, one cannot use hindsight reconstruction to pick and choose among isolated disclosures in the art to deprecate the claimed invention. Further, it is impermissible to pick and choose from any one reference only so much of it as will support a given position, to the exclusion of other parts necessary to the full appreciation of what such reference fairly suggests to one of ordinary skill in the art. The present Section 103 rejection is based on a combination of teachings selected in an attempt to arrive at the claimed invention. Since there is no teaching nor suggestion in the cited art for the combination, the Section 103 rejection appears to be based on a hindsight reconstruction in which isolated disclosures have been picked and chosen in an attempt to deprecate the present invention. Of course, such a combination is impermissible, and for this reason alone, Applicants request that the Section 103 rejection be withdrawn.

In addition, as is well established, obviousness cannot be established by combining the teachings of the cited art to produce the claimed invention, absent some teaching, suggestion, or incentive supporting the combination. None of Zaugg, Anderson, Payling, or Tsukamoto, considered alone or in combination, describe or suggest a gas turbine engine that channels condensate from an intercooler to a second compressor to facilitate reducing an operating temperature of the gas turbine engine.

Furthermore, Applicants respectfully submit that Anderson and Tsukamoto both teach away from the present invention. For example, at column 4, lines 15-22 Anderson recites,

“the water should evaporate before contacting the high velocity blades to avoid erosion of the high velocity blades in the high-pressure compressor. Therefore, it is important to inject the liquid coolant into the space [between the low-pressure compressor and the high pressure compressor] in the form of particles that are fine enough so that they can evaporate rapidly to avoid erosion of the high velocity blades in the high-pressure compressor.” In contrast, in the present invention, condensate is injected directly into the high-pressure compressor.

Moreover, at column 3, lines 6-8, Tsukamoto recites that an “object of the present invention is to provide a gas turbine power plant which has no intercooler for compressed air” In contrast, in the present invention, an intercooler is utilized to supply condensate to the compressor. Accordingly, both Anderson and Tsukamoto appear to each teach away from the present invention and, as such, no motivation is provided to combine them with each other or any other reference.

Moreover, and to the extent understood, none of Zaugg, Anderson, Payling, or Tsukamoto, considered alone or in combination, describe nor suggest the claimed invention. Specifically, Claim 1 recites a method for operating a gas turbine engine, including a first compressor, a second compressor, and a turbine, coupled together in serial flow arrangement, wherein the method comprises “channeling compressed airflow discharged from the first compressor through an intercooler having a cooling medium flowing therethrough . . . operating the intercooler such that condensate is formed in the intercooler from the compressed airflow . . . channeling the condensate to an inlet of the second compressor to facilitate reducing an operating temperature of the gas turbine engine.”

None of Zaugg, Anderson, Payling, or Tsukamoto, considered alone or in combination, describe or suggest a method for operating a gas turbine engine as recited in Claim 1. More specifically, none of Zaugg, Anderson, Payling, or Tsukamoto, considered alone or in combination, describe or suggest a method for operating a gas turbine engine, wherein condensate, formed in an intercooler, is channeled to an inlet of a second compressor. Rather, in contrast to the present invention, Zaugg describes injecting condensate from an intercooler into combustion chambers, Anderson describes spraying a liquid coolant into air discharged from a low pressure combustor prior to the air entering a high-pressure compressor, Payling describes an engine wherein cooled air, not condensate, is

discharged from an intercooler into a second compressor, and Tsukamoto describes a gas turbine power plant, wherein a spray device sprays fine water droplets into compressed air to humidify the compressed air.

Accordingly, for at least the reasons set forth above, Claim 1 is submitted to be patentable over Zaugg in view of either Anderson and/or Payling and optionally in view of Tsukamoto.

Claims 2-8 depend from independent Claim 1. When the recitations of Claims 2-8 are considered in combination with the recitations of Claim 1, Applicants submit that dependent Claims 2-8 likewise are patentable over Zaugg in view of either Anderson and/or Payling and optionally in view of Tsukamoto.

Claim 9 recites a cooling system for a gas turbine engine that includes at least a first compressor, a second compressor, and a turbine, wherein the cooling system comprises “an intercooler coupled downstream from the first compressor such that compressed air discharged from the first compressor is routed therethrough, said intercooler having a working fluid flowing therethrough . . . an injection system coupled in flow communication with said intercooler, said injection system configured to channel condensate formed in said intercooler into the second compressor to facilitate reducing an operating temperature of the gas turbine engine.”

None of Zaugg, Anderson, Payling, or Tsukamoto, considered alone or in combination, describe or suggest a cooling system for a gas turbine engine as recited in Claim 9. More specifically, none of Zaugg, Anderson, Payling, or Tsukamoto, considered alone or in combination, describe or suggest a cooling system for a gas turbine engine, wherein an injection system is configured to channel condensate, formed in an intercooler, to a second compressor. Rather, in contrast to the present invention, Zaugg describes injecting condensate from an intercooler into combustion chambers, Anderson describes spraying a liquid coolant into air discharged from a low pressure combustor prior to the air entering a high-pressure compressor, Payling describes an engine wherein cooled air, not condensate, is discharged from an intercooler into a second compressor, and Tsukamoto describes a gas

turbine power plant, wherein a spray device sprays fine water droplets into compressed air to humidify the compressed air.

Accordingly, for at least the reasons set forth above, Claim 9 is submitted to be patentable over Zaugg in view of either Anderson and/or Payling and optionally in view of Tsukamoto.

Claims 10-15 depend from independent Claim 9. When the recitations of Claims 10-15 are considered in combination with the recitations of Claim 9, Applicants submit that dependent Claims 10-15 likewise are patentable over Zaugg in view of either Anderson and/or Payling and optionally in view of Tsukamoto.

Claim 16 recites a gas turbine engine comprising “a first compressor . . . a second compressor downstream from said first compressor . . . a turbine coupled in flow communication with said second compressor . . . a cooling system comprising . . . an intercooler coupled downstream from said first compressor such that compressed air discharged from said first compressor is routed therethrough, said intercooler having a working fluid flowing therethrough . . . a condensate injection system coupled in flow communication with said intercooler, said condensate injection system configured to channel condensate formed in said intercooler into said second compressor to facilitate reducing a temperature of said gas turbine engine.”

None of Zaugg, Anderson, Payling, or Tsukamoto, considered alone or in combination, describe or suggest a gas turbine engine as recited in Claim 16. More specifically, none of Zaugg, Anderson, Payling, or Tsukamoto, considered alone or in combination, describe or suggest a gas turbine engine, wherein a condensate injection system is configured to channel condensate, formed in an intercooler, to a second compressor. Rather, in contrast to the present invention, Zaugg describes injecting condensate from an intercooler into combustion chambers, Anderson describes spraying a liquid coolant into air discharged from a low pressure combustor prior to the air entering a high-pressure compressor, Payling describes an engine wherein cooled air, not condensate, is discharged from an intercooler into a second compressor, and Tsukamoto describes a gas turbine power

plant, wherein a spray device sprays fine water droplets into compressed air to humidify the compressed air.

Accordingly, for at least the reasons set forth above, Claim 16 is submitted to be patentable over Zaugg in view of either Anderson and/or Payling and optionally in view of Tsukamoto.

Claims 17-20 depend from independent Claim 16. When the recitations of Claims 17-20 are considered in combination with the recitations of Claim 16, Applicants submit that dependent Claims 17-20 likewise are patentable over Zaugg in view of either Anderson and/or Payling and optionally in view of Tsukamoto.

For the reasons set forth above, Applicants respectfully request that the Section 103 rejection of Claims 1-20 be withdrawn.

The rejection of Claims 1-20 under 35 U.S.C. § 103(a) as being unpatentable over Payling in view of Zaugg and optionally in view of Tsukamoto is respectfully traversed.

Payling, Zaugg, and Tsukamoto are described hereinabove.

Applicants respectfully submit that the Section 103 rejection of the presently pending claims is not a proper rejection. As is well established, obviousness cannot be established by combining the teachings of the cited art to produce the claimed invention, absent some teaching, suggestion, or incentive supporting the combination. None of Payling, Zaugg, or Tsukamoto considered alone or in combination, describe or suggest the claimed combination. Furthermore, in contrast to the assertion within the Office Action, Applicants respectfully submit that it would not be obvious to one skilled in the art to combine Payling with either Zaugg or Tsukamoto because there is no motivation to combine the references suggested in the art. Additionally, the Examiner has not pointed to any prior art that teaches or suggests to combine the disclosures, other than Applicants' own teaching. Rather, only the conclusory statement that "it would have been obvious to one of ordinary skill in the art to use the condensate from the intercooler of Payling et al., as taught by Zaugg, in order to reduce the demand for external water and enhance the overall thermodynamic efficiency" suggests combining the disclosures.

As the Federal Circuit has recognized, obviousness is not established merely by combining references having different individual elements of pending claims. Ex parte Levengood, 28 U.S.P.Q.2d 1300 (Bd. Pat. App. & Inter. 1993). MPEP 2143.01. Rather, there must be some suggestion, outside of Applicants' disclosure, in the prior art to combine such references, and a reasonable expectation of success must be both found in the prior art, and not based on Applicant's disclosure. In re Vaeck, 20 U.S.P.Q.2d 1436 (Fed. Cir. 1991). In the present case, neither a suggestion or motivation to combine the prior art disclosures, nor any reasonable expectation of success has been shown.

Furthermore, it is impermissible to use the claimed invention as an instruction manual or "template" to piece together the teachings of the cited art so that the claimed invention is rendered obvious. Specifically, one cannot use hindsight reconstruction to pick and choose among isolated disclosures in the art to deprecate the claimed invention. Further, it is impermissible to pick and choose from any one reference only so much of it as will support a given position, to the exclusion of other parts necessary to the full appreciation of what such reference fairly suggests to one of ordinary skill in the art. The present Section 103 rejection is based on a combination of teachings selected in an attempt to arrive at the claimed invention. Since there is no teaching nor suggestion in the cited art for the combination, the Section 103 rejection appears to be based on a hindsight reconstruction in which isolated disclosures have been picked and chosen in an attempt to deprecate the present invention. Of course, such a combination is impermissible, and for this reason alone, Applicants request that the Section 103 rejection be withdrawn.

In addition, as is well established, obviousness cannot be established by combining the teachings of the cited art to produce the claimed invention, absent some teaching, suggestion, or incentive supporting the combination. None of Payling, Zaugg, or Tsukamoto considered alone or in combination, describe or suggest a gas turbine engine that channels condensate from an intercooler to a second compressor to facilitate reducing an operating temperature of the gas turbine engine.

Furthermore, Applicants respectfully submit that Tsukamoto teaches away from the present invention. For example, at column 3, lines 6-8, Tsukamoto recites that an "object of

the present invention is to provide a gas turbine power plant which has no intercooler for compressed air” In contrast, in the present invention, an intercooler is utilized to supply condensate to the compressor. Accordingly, Tsukamoto appears to teach away from the present invention and, as such, no motivation is provided to combine Tsukamoto with any other reference.

Moreover, and to the extent understood, none of Payling, Zaugg, or Tsukamoto, considered alone or in combination, describe nor suggest the claimed invention. Specifically, Claim 1 recites a method for operating a gas turbine engine, including a first compressor, a second compressor, and a turbine, coupled together in serial flow arrangement, wherein the method comprises “channeling compressed airflow discharged from the first compressor through an intercooler having a cooling medium flowing therethrough . . . operating the intercooler such that condensate is formed in the intercooler from the compressed airflow . . . channeling the condensate to an inlet of the second compressor to facilitate reducing an operating temperature of the gas turbine engine.”

None of Payling, Zaugg, or Tsukamoto, considered alone or in combination, describe or suggest a method for operating a gas turbine engine as recited in Claim 1. More specifically, none of Payling, Zaugg, or Tsukamoto, considered alone or in combination, describe or suggest a method for operating a gas turbine engine, wherein condensate, formed in an intercooler, is channeled to an inlet of a second compressor. Rather, in contrast to the present invention, Payling describes an engine wherein cooled air, not condensate, is discharged from an intercooler into a second compressor, Zaugg describes injecting condensate from an intercooler into combustion chambers, and Tsukamoto describes a gas turbine power plant, wherein a spray device sprays fine water droplets into compressed air to humidify the compressed air.

Accordingly, for at least the reasons set forth above, Claim 1 is submitted to be patentable over Payling in view of Zaugg and optionally in view of Tsukamoto.

Claims 2-8 depend from independent Claim 1. When the recitations of Claims 2-8 are considered in combination with the recitations of Claim 1, Applicants submit that dependent

Claims 2-8 likewise are patentable over Payling in view of Zaugg and optionally in view of Tsukamoto.

Claim 9 recites a cooling system for a gas turbine engine that includes at least a first compressor, a second compressor, and a turbine, wherein the cooling system comprises “an intercooler coupled downstream from the first compressor such that compressed air discharged from the first compressor is routed therethrough, said intercooler having a working fluid flowing therethrough . . . an injection system coupled in flow communication with said intercooler, said injection system configured to channel condensate formed in said intercooler into the second compressor to facilitate reducing an operating temperature of the gas turbine engine.”

None of Payling, Zaugg, or Tsukamoto, considered alone or in combination, describe or suggest a cooling system for a gas turbine engine as recited in Claim 9. More specifically, none of Payling, Zaugg, or Tsukamoto, considered alone or in combination, describe or suggest a cooling system for a gas turbine engine, wherein an injection system is configured to channel condensate formed in an intercooler to a second compressor. Rather, in contrast to the present invention, Payling describes an engine wherein cooled air, not condensate, is discharged from an intercooler into a second compressor, Zaugg describes injecting condensate from an intercooler into combustion chambers, and Tsukamoto describes a gas turbine power plant, wherein a spray device sprays fine water droplets into compressed air to humidify the compressed air.

Accordingly, for at least the reasons set forth above, Claim 9 is submitted to be patentable over Payling in view of Zaugg and optionally in view of Tsukamoto.

Claims 10-15 depend from independent Claim 9. When the recitations of Claims 10-15 are considered in combination with the recitations of Claim 9, Applicants submit that dependent Claims 10-15 likewise are patentable over Payling in view of Zaugg and optionally in view of Tsukamoto.

Claim 16 recites a gas turbine engine comprising “a first compressor . . . a second compressor downstream from said first compressor . . . a turbine coupled in flow

communication with said second compressor . . . a cooling system comprising . . . an intercooler coupled downstream from said first compressor such that compressed air discharged from said first compressor is routed therethrough, said intercooler having a working fluid flowing therethrough . . . a condensate injection system coupled in flow communication with said intercooler, said condensate injection system configured to channel condensate formed in said intercooler into said second compressor to facilitate reducing a temperature of said gas turbine engine.”

None of Payling, Zaugg, or Tsukamoto, considered alone or in combination, describe or suggest a gas turbine engine as recited in Claim 16. More specifically, none of Payling, Zaugg, or Tsukamoto, considered alone or in combination, describe or suggest a gas turbine engine, wherein a condensate injection system is configured to channel condensate formed in an intercooler to a second compressor. Rather, in contrast to the present invention, Payling describes an engine wherein cooled air, not condensate, is discharged from an intercooler into a second compressor, Zaugg describes injecting condensate from an intercooler into combustion chambers, and Tsukamoto describes a gas turbine power plant, wherein a spray device sprays fine water droplets into compressed air to humidify the compressed air.

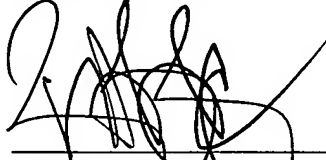
Accordingly, for at least the reasons set forth above, Claim 16 is submitted to be patentable over Payling in view of Zaugg and optionally in view of Tsukamoto.

Claims 17-20 depend from independent Claim 16. When the recitations of Claims 17-20 are considered in combination with the recitations of Claim 16, Applicants submit that dependent Claims 17-20 likewise are patentable over Payling in view of Zaugg and optionally in view of Tsukamoto.

For the reasons set forth above, Applicants respectfully request that the Section 103 rejection of Claims 1-20 be withdrawn.

In view of the foregoing amendments and remarks, all the claims now active in this application are believed to be in condition for allowance. Reconsideration and favorable action is respectfully solicited.

Respectfully Submitted,

A handwritten signature in black ink, appearing to be 'R. B. Reeser, III', written over a horizontal line.

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